

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 1. (currently amended): A method for controlling the end point of the chemical mechanical
2 polishing (CMP) of a surface having a plurality of projecting components fabricated thereon,
3 comprising the steps of:
4 fabricating a plurality of upwardly projecting components upon a substrate surface;
5 fabricating a first material layer that is deposited in part upon a top surface of said
6 projecting components and in part upon a top surface of said substrate;
7 fabricating a CMP polishing end stop layer above said first material layer;
8 fabricating a polishable layer above said polishing end stop layer;
9 conducting a CMP polishing step utilizing a polishing slurry that selectively removes said
10 polishing layer as compared to said polishing end stop layer;
11 removing portions of said polishing end stop layer subsequent to said polishing step.

1 2. (original): A method for controlling CMP polishing as described in claim 1 wherein said
2 stop layer is composed of a substance that is significantly more resistant to polishing removal by
3 said slurry than said polishable layer.

1 3. (currently cancelled):

1 4. (previously cancelled)

1 5. (original): A method for controlling CMP polishing as described in claim 2 wherein said
2 stop layer is comprised of a substance selected from the group consisting of tantalum and
3 diamond-like-carbon (DLC).

1 6. (original): A method for controlling CMP polishing as described in claim 5 wherein said
2 stop layer is formed with a thickness of from 200 to 500 Å.

1 7. (original): A method for controlling CMP polishing as described in claim 5 wherein said
2 stop layer is comprised of tantalum and is formed with a thickness of approximately 500 Å.

1 8. (original): A method for controlling CMP polishing as described in claim 5 wherein said
2 stop layer is comprised of DLC and is formed with a thickness of approximately 200 Å.

1 9. (original): A method for controlling CMP polishing as described in claim 2 wherein said
2 stop layer is removed utilizing an ion etching process.

1 10. (original): A method for controlling CMP polishing as described in claim 2 wherein said
2 stop layer is comprised of tantalum and wherein said stop layer is removed utilizing an argon ion
3 etching process.

1 11. (original): A method for controlling CMP polishing as described in claim 2 wherein said
2 stop layer is removed utilizing a CMP process.

1 12. (original): A method for controlling CMP polishing as described in claim 2 wherein said
2 stop layer is comprised of DLC and wherein said stop layer is removed through use of a reactive
3 ion etch process utilizing oxygen reactive species.

1 13. (original): A method for controlling CMP polishing as described in claim 2 wherein said
2 stop layer is comprised of DLC and wherein said stop layer is removed by use of a plasma ashing
3 process utilizing oxygen.

1 14. (original): A method for controlling CMP polishing as described in claim 2 wherein an
2 end stopping point of said CMP process is determined by monitoring a polishing motor current
3 during said CMP polishing step.

1 15. (previously amended): A method for controlling the end point of a chemical mechanical
2 polishing (CMP) process of a surface having a plurality of upwardly projected components
3 fabricated thereon, comprising the steps of:
4 depositing a polishing stop layer upon said components, with portions of said stop layer
5 being deposited upon the top surface portions of said components;
6 depositing a polishable layer upon said stop layer, wherein said polishable layer is
7 deposited to a depth that is greater than a projecting height of said components;
8 conducting a CMP polishing step utilizing a polishing slurry that selectively removes said
9 polishing layer as compared to said stop layer; wherein said CMP polishing step is conducted
10 down to said portions of said stop layer that cover said top surface portions of said components;

11 removing said portions of said stop layer that cover said top surface portions of said
12 components.

1 16. (previously cancelled)

1 17. (original): A method for controlling CMP polishing as described in claim 16 wherein said
2 stop layer is comprised of a substance selected from the group consisting of tantalum and
3 diamond-like-carbon (DLC).

1 18. (original): A method for controlling CMP polishing as described in claim 17 wherein said
2 stop layer is formed with a thickness of from 200 to 500 Å.

1 19. (original): A method for controlling CMP polishing as described in claim 17 wherein said
2 stop layer is comprised of tantalum and is formed with a thickness of approximately 500 Å.

1 20. (original): A method for controlling CMP polishing as described in claim 17 wherein said
2 stop layer is comprised of DLC and is formed with a thickness of approximately 200 Å.

1 21. (original): A method for controlling CMP polishing as described in claim 17 wherein said
2 stop layer is removed utilizing an ion etching process.

1 22. (original): A method for controlling CMP polishing as described in claim 16 wherein said
2 stop layer is comprised of tantalum and wherein said stop layer is removed utilizing an argon ion
3 etching process.

1 23. (original): A method for controlling CMP polishing as described in claim 16 wherein said
2 stop layer is removed utilizing a CMP process.

1 24. (original): A method for controlling CMP polishing as described in claim 17 wherein said
2 stop layer is comprised of DLC and wherein said stop layer is removed through use of a reactive
3 ion etch process utilizing oxygen reactive species.

1 25. (original): A method for controlling CMP polishing as described in claim 17 wherein said
2 stop layer is comprised of DLC and wherein said stop layer is removed by use of a plasma ashing
3 process utilizing oxygen.

1 26. (original): A method for controlling CMP polishing as described in claim 16 wherein an
2 end stopping point of said CMP process is determined by monitoring a polishing motor current
3 during said CMP polishing step.

1 27. (previously amended): A method for controlling the end point of a chemical mechanical
2 polishing (CMP) process of a substrate surface having a plurality of upwardly projecting
3 components fabricated thereon, comprising the steps of:

4 depositing a first layer of material upon said substrate, wherein a projecting portion of
5 said first layer of material is deposited on top of said components, and wherein said first layer is
6 deposited to a depth that is less than a projecting height of said components;

7 depositing a polishing stop layer upon said first layer of material, with a portion of said
8 stop layer being deposited on top of said projecting portions of said first layer;

9 depositing a polishable layer on top of said stop layer, wherein portions of said polishable
10 layer are deposited on top of said portion of said stop layer that are deposited on top of said
11 projecting portions of said first layer;

12 removing portions of said polishable layer and said stop layer that are deposited on top of
13 said projecting portions of said first layer;

14 conducting a CMP polishing step utilizing a polishing slurry that selectively removes said
15 polishable layer as compared to said stop layer;

16 removing said stop layer from said first layer.

1 28. (previously cancelled)

1 29. (previously amended): A method for controlling CMP polishing as described in claim 27
2 wherein said stop layer is comprised of a substance selected from the group consisting of
3 tantalum and diamond like carbon (DLC).

1 30. (previously amended): A method for controlling CMP polishing as described in claim 27
2 wherein said stop layer is formed with a thickness of from 200 to 500 Å.

1 31. (previously amended): A method for controlling CMP polishing as described in claim 27
2 wherein said stop layer is comprised of tantalum and is formed with a thickness of approximately
3 500 Å.

1 32. (original): A method for controlling CMP polishing as described in claim 29 wherein
2 said stop layer is comprised of DLC and is formed with a thickness of approximately 200 Å.

1 33. (previously amended:) A method for controlling CMP polishing as described in claim 27
2 wherein said stop layer is removed utilizing an ion etching process.

1 34. (previously amended): A method for controlling CMP polishing as described in claim 27
2 wherein said stop layer is comprised of tantalum and wherein said stop layer is removed utilizing
3 an argon ion etching process.

1 35. (previously amended) A method for controlling CMP polishing as described in claim 27
2 wherein said stop layer is removed utilizing a CMP process.

1 36. (original) A method for controlling CMP polishing as described in claim 29 wherein said
2 stop layer is comprised of DLC and wherein said stop layer is removed through use of a reactive
3 ion etch process utilizing oxygen reactive species.

1 37. (original): A method for controlling CMP polishing as described in claim 29 wherein
2 said stop layer is comprised of DLC and wherein said stop layer is removed by use of a plasma
3 ashing process utilizing oxygen.

1 38. (previously amended): A method for controlling CMP polishing as described in claim
2 27 wherein an end stopping point of said CMP process is determined by monitoring a polishing
3 motor current during said CMP polishing step.

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